

AMMENDMENTS TO THE CLAIMS

Claims 1-20 are pending in the application. In response to the action, please cancel claims 2, 5, 10 and 19 and amend claims 1, 8, 11, 12, 16-18, and 20, matter to be deleted is shown in strikethrough and matter to be added is shown in underline, and add new claim 21 as follows.

1. (currently amended) Thin film apparatus comprising:

a) a signal layer including a continuous signal conductor deposited on a first surface of a dielectric substrate, wherein the signal conductor is defined by a plurality of geometrically similar pathway portions that extend from a proximal end to a distal end of said signal conductor in adjoining relation to one another, wherein said plurality of pathway portions are positioned to electrically interact with each other, wherein first and second sections of said signal conductor that terminate at said proximal and distal ends exhibit a conductor width that is less than the conductor width of the intervening ones of said plurality of pathway portions, and wherein the spacing between said first and second sections to the adjoining ones of said plurality of pathway portions is less than the spacings between the others of said plurality of pathway portions ~~wherein one of the pathway portions is unbounded on one side by the others of said plurality of pathway portions and wherein said unbounded pathway portion exhibits a conductor width that is less than the conductor width of the others of said plurality of pathway portions;~~

b) a ground plane layer deposited on a second surface of said dielectric substrate;
and

c) termination means for coupling electrical signals to said signal conductor and said ground plane conductor.

2. (cancelled) Apparatus as set forth in claim 1 wherein the spacing of said unbounded pathway portion to an adjoining one of said plurality of pathway portions is less than the spacings between the others of said plurality of pathway portions.

3. (original) Apparatus as set forth in claim 1 wherein said signal conductor and said ground layer are sputtered onto a ceramic substrate.

4. (original) Apparatus as set forth in claim 1 wherein said signal conductor comprises a plurality of serpentine windings that define a delay line.

5. (cancelled) Apparatus as set forth in claim 1 wherein a plurality of apertures extend through said substrate and are displaced about said signal layer and aligned to couple said signal conductor to said ground plane conductor.

6. (original) Apparatus as set forth in claim 1 wherein said signal conductor defines a delay line.

7. (original) Apparatus as set forth in claim 1 wherein said substrate comprises a flexible material and said signal conductor is partitioned such that said substrate can be folded during packaging.

8. (currently amended) Thin film apparatus comprising:

a) a signal layer including a continuous signal conductor deposited on a first surface of a dielectric planar substrate, wherein the signal conductor is defined by a coiled pathway having a plurality of windings that extend from an outer end unbounded by said plurality of windings to a bounded interior end in parallel relation to one another, wherein the width of the portions of said windings terminating at said outer and interior ends is less than the width of the others of said plurality of windings ~~wherein one of said plurality of windings is unbounded on one side by the others of said plurality of~~

~~windings, and wherein said unbounded winding exhibits a conductor width that is less than the conductor width of the others of said plurality of windings;~~

b) a ground plane layer deposited on a second surface of said dielectric substrate to substantially cover the second surface; and

c) termination means for coupling electrical signals to said signal conductor and said ground plane conductor.

9. (previously amended) Apparatus as set forth in claim 8 wherein said substrate comprises a flexible material and said signal conductor is partitioned into a plurality of coiled sections that are arranged such that said substrate can be folded during packaging to stack said coiled sections one upon another.

10. (cancelled) Apparatus as set forth in claim 9 including a plurality of apertures that extend through said substrate and are aligned to couple said signal conductor and said ground plane conductor together.

11. (currently amended) Apparatus as set forth in claim 8 wherein the spacing between the portions of said windings terminating at said outer and interior ends is less than the spacing between the others of said plurality of windings ~~said unbounded winding comprises a proximal end of said signal conductor and wherein said proximal end and a distal end of said signal conductor each exhibit a substantially identical width and wherein the spacing between said proximal and distal ends to an adjoining winding is less than the spacing between the others of said plurality of windings.~~

12. (currently amended) Delay line apparatus comprising:

a) a signal layer including a continuous signal conductor deposited on a first surface of a dielectric planar substrate, wherein the signal conductor is defined by a

plurality of pathway portions that extend from a proximal end to a distal end in parallel relation to one another, wherein said plurality of pathway portions are positioned to electrically interact with each other, wherein first and second sections of the pathway portions terminate at said proximal and distal ends, wherein said first and second sections exhibit a tapering width that is less than the width of the others of said plurality of pathway portions, and wherein the spacing between said first and second sections to the adjoining pathway portions is less than the spacing between the others of said plurality of pathway portions ~~wherein one of the pathway portions is unbounded on one side by the others of said plurality of pathway portions, wherein said unbounded pathway portion exhibits a conductor width that is less than the conductor width of the others of said plurality of pathway portions and wherein the spacing of said unbounded pathway portion to an adjoining one of said plurality of pathway portions is less than the spacing between the others of said plurality of pathway portions;~~

b) a ground plane layer deposited on a second surface of said dielectric substrate to substantially cover the second surface; and

c) termination means for coupling electrical signals to said signal conductor and said ground plane conductor.

13. (previously amended) Apparatus as set forth in claim 12 wherein said substrate comprises a flexible material and said signal conductor is partitioned into a plurality of coiled sections that are arranged such that said substrate can be folded during packaging to stack said coiled sections one upon another.

14. (currently amended) Thin film Delay line apparatus comprising:

a) a signal layer including a continuous signal conductor deposited on a first surface of a dielectric substrate, wherein the signal conductor is defined by a plurality of symmetrical pathway portions of identical shape that extend from a proximal end to a distal end in parallel relation to one another, wherein said plurality of pathway portions are positioned to electrically interact with each other, wherein the spacing between first and second sections of the pathway portions that terminate in said proximal and distal ends to the adjoining pathway portions is less than the spacing between the others of said plurality of pathway portions ~~wherein one of the pathway portions is unbounded on one side by the others of said plurality of pathway portions, and wherein the spacing of said unbounded pathway portion to an adjoining one of said plurality of pathway portions is less than the spacing between the others of said plurality of pathway portions;~~

b) a ground plane layer deposited on a second surface of said dielectric substrate to substantially cover the second surface; and

c) termination means for coupling electrical signals to said signal conductor and said ground plane conductor.

15. (previously added) Apparatus as set forth in claim 1 wherein said signal conductor exhibits a symmetrical pattern.

16. (currently amended) Apparatus as set forth in claim 1 wherein said signal conductor exhibits a planar coil shape comprising a plurality of windings that extend from an unbounded outer proximal end to a bounded interior distal end in parallel relation to one another.

17. (currently amended) Apparatus as set forth in claim 16 wherein said first and second sections each exhibit a tapering width substantially identical to the other said

~~unbounded pathway portion comprises a proximal end of said signal conductor and wherein a distal end of said signal conductor exhibits a width substantially identical to the proximal end.~~

18. (currently amended) Apparatus as set forth in claim 1 wherein said signal conductor is partitioned into a plurality of interconnected planar coils and wherein each coil includes a plurality of windings that extend from an outer proximal end unbounded by adjoining windings to a bounded interior distal end in parallel relation to one another and wherein the conductor width of said outer and interior ends of each of the interconnected coils is less than the width of adjoining windings ~~connected coiled sections and wherein each section includes an unbounded pathway portion of reduced width.~~

19. (cancelled) Apparatus as set forth in claim 1 wherein said unbounded pathway portion comprises a proximal end and wherein a distal end of said signal conductor exhibits a width substantially identical to the proximal end.

20. (currently amended) Apparatus as set forth in claim 8 wherein the pathway portions terminating at said proximal and distal ends each exhibit a tapering width substantially identical to the other ~~said unbounded pathway portion comprises a proximal end and wherein a distal end of said signal conductor exhibits a width substantially identical to the proximal end.~~

21. (new) Apparatus as set forth in claim 18 wherein the spacing between outer and interior ends of each interconnected coil to an adjacent winding is less than the spacing between the others of said plurality of said windings.